



**IN THE UNITED STATES PATENT  
AND TRADEMARK OFFICE**

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

AF/3713  
8/1 Appeal Brief  
5/29/03  
[Signature]

In Re The Application of

DAVID CARL and NATHAN GERSHON

Serial No. 09/716,045

Group Art Unit 3713

Filed: November 20, 2000

Examiner: Dmitry Suhol

For: FREE FALL AND GAME SIMULATOR

Supervisory Patent Examiner:  
Derris H. Banks

APPEAL BRIEF ON BEHALF OF APPLICANTS

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Dear Sir:

Applicants, having filed their Notice of Appeal on March 14, 2003, from the Examiner's final rejection of the subject application, dated September 16, 2002, submit the following as their Appeal Brief:

*1. Real Party in Interest.*

The real parties in interest in this matter are the original and first inventors, David Carl and Nathan Gershon, who bring this appeal on their own behalf.

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## *2. Related Appeals and Interferences.*

There are no related appeals or interferences.

## *3. Status of Claims.*

Claims 1 through 12 were filed with the original application. Claim 5 was cancelled without prejudice by the RESPONSE dated June 24, 2003. Claims 1, 3 and 4; and 7, 8, 9, and 12 were amended by the same RESPONSE. Those claims together with Claims 2, 6, 10 and 11 as filed, remain in the Application. Claim 13 was added by the RESPONSE of June 24, 2002. Each of these noted Claims remain in the Application, and their rejection is herewith appealed.

## *4. Status of Amendments.*

A first office action was mailed on March 28, 2002, and a Response to that office action was filed on July 1, 2002. It is Applicant's understanding that the Response dated June 24, 2002, was entered by the Examiner.

A second office action was mailed on September 16, 2002, and it was presumably entered, since the Examiner found the argument "moot". The second office action included a detailed argument in which the Examiner substituted his opinion for fact in rejecting the claims as heretofore unarticulated bases. It is from that office action that Applicants appeal.

### *5. Summary of Invention.*

The invention, as defined by the only independent claim, Claim 1, relates to a free fall simulator [10]<sup>1</sup> in which there is a primary wall [12] which defines a cylindrical chamber [11]. Means for providing a column of air under pressure in the chamber [11] comprising a sub system of fans [18]. The internal surface [14] of the wall [12] is smooth so as to provide for laminar flow (Specification, page 6, lines 1-5, 19-22).<sup>2</sup>

Claim 2, dependent on Claim 1, notes that the diameter of the chamber is variable (page 7, line 13 to Page 8, line 6).

Claim 3, which is dependent on Claim 1, adds a camera [40 ] positioned outside the air stream (page 9, lines 3-6) so as to not disturb the laminar flow.

Claim 4, also dependent on Claim 1, adds the curtain wall [21] (page 7, line 18 to page 8, line 6) having an inner surface [23] which is smooth and of a pastel color (page 8, line 21 to page 9, line 12).

Claim 6, dependent on Claim 2, combines the elements of Claims 2 and 4.

Claim 7 is dependent on Claim 1 and, further, defines the subsystem of fans, [18] as being selectively controlled to provide for the use of only those fans

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<sup>1</sup>Numerals in brackets denote numerals on the drawings.

<sup>2</sup>Page and line numbers in parentheses denote page and line numbers of the specification.

which would provide the requisite air current within the active chamber, whatever its diameter (page 7, line 17 to page 8, line 4).

Claim 8, dependent on Claim 1, adds at least one goal [34] and the claim further notes that the goals are recessed so as to not disturb the laminar flow conditions (page 9, lines 13-21).

Claim 9 is dependent on Claim 1 and adds pairs of opposed goals as referenced in the specification noted above with respect to Claim 8.

Claim 10 is dependent on Claim 6 and adds the elements of Claim 4 as they relate to a smooth inner wall of pastel color.

Claim 11 is dependent on Claim 6 and adds the elements of Claim 3 pertaining to the use and location of the camera [40].

Claim 12 is dependent on Claim 6 and adds control of the fans as described in Claim 7.

Claim 13 is dependent on Claim 6 and denotes the secondary wall as a curtain wall [21] (page 7, lines 17-21).

#### *6. Issues On Appeal.*

Whether Claims 1, 3, 4 and 6 through 13 are unpatentable under the first paragraph of 35 U.S.C. 112.

Whether Claims 2, 4, 7, 10 and 13 are unpatentable under the second paragraph of 35 U.S.C. 112.

Whether Claims 1 and 2 are unpatentable under 35 U.S.C. 103(a) over Kitchen in view of Larsen et al.

Whether Claims 1 through 3, 6, 10, 11 and 12 are unpatentable under 35 U.S.C. 103(a) over Methfessel in view of Larsen.

Whether Claim 3 is unpatentable under 35 U.S.C. 103(a) over Kitchen and Larsen in view of Methfessel.

Whether Claim 4 is unpatentable under 35 U.S.C. 103(a) over Kitchen.

Whether Claims 1 and 7 are unpatentable under 35 U.S.C. 103(a) over Methfessel and Larsen in view of Louttit.

Whether Claims 8, 9 and 12 are unpatentable under 35 U.S.C. 103(a) over Methfessel and Larsen in view of Lenhart.

*7. Grouping of Claims.*

Claims 1 through 4 and 6 through 13 as being rejected under the first paragraph of 35 U.S.C. 112.

Claims 2, 4, 7, 10 and 12 as being rejected under the second paragraph of 35 U.S.C. 112.

Claims 1 and 2 as being rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchen in view of Larsen.

Claims 1 through 3, 6, 10, 11 and 13 as being rejected under 35 U.S.C. 103(a) as being unpatentable over Methfessel in view of Larsen.

Claim 3 as being rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchen and Larsen in view of Methfessel.

Claim 4 as being rejected under 35 U.S.C. 103(a) as being unpatentable over Kitchen.

Claims 1 and 7 as being rejected under 35 U.S.C. 103(a) as being unpatentable over Methfessel and Larsen in view of Louttit.

Claims 8, 9 and 12 as being rejected under 35 U.S.C. 103(a) as being unpatentable over Methfessel and Larsen, in view of Lenhart.

*8. Argument.*

Applicants respond to the arguments raised by the Examiner in his letter mailed September 15, 2002, contained in Section 6 above as follows:

The Examiner has made several rejections premised on 35 U.S.C. 112, not because there is lack of antecedent basis, but because, in the Examiner's view, there was insufficient description in the specification to permit one skilled in the art to practice the invention.

Claims 1 through 13 were rejected under 35 U.S.C. 112 because the Examiner did not find sufficient support for the language in Claim 1 for the column of air moving in laminar flow.

The specification states, rather clearly, beginning on page 6, line 19, that the column of air up stream of the fliers is moving in laminar flow. The Applicants are not required to know why a particular phenomenon takes place, only

that it takes place. (See, for example, *Diamond Rubber Co. of New York v. Consolidated Rubber Tire Co.*, 220 U.S. 428, 435-36, 31 S. Ct. 444, 55 L. Ed. 527 (1911), beginning on page 434). In truth and in fact, that is what Applicants disclose as their invention, and the Examiner's personal opinion that the fans "create turbulent eddies" is an apparent effort to find fault with the claims, when no other basis can be found.

The next rejection under 35 U.S.C. 112 relates to Claim 3. Again, the Examiner has looked at the drawings and finds that there is no support for the camera [40] being recessed out of the column of air. Once again, however, it is the inventors' claim that the camera is disposed out of the column of air and any appearance in the drawing which would permit the Examiner to opine as to what the invention is nothing more than an effort by the inventors' to show the camera and not project it into the air stream. The claim clearly states that the camera is to be outside the air stream.

Claim 8 is rejected under 35 U.S.C. 112. Again, the Examiner quarrels with the language "all existing goals being recessed within said wall" and, once again, that is the claim language, notwithstanding what the Examiner perceives the drawings to show. Reference to the goals being recessed is found on page 9, beginning on line 13 and since the goals are apertures, as distinguished from goals in the nature of a basketball goal or a soccer goal, they do not protrude into the air stream.

Proceeding further, Claims 2, 4, 7, 10 and 12 are rejected under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention.

In Claim 2, the diameter of the column of air is set forth as being variable. This is accomplished in accordance with the invention, but using secondary walls and reference is made to page 7, line 13 through page 8, line 6 of the specification. Specifically, on page 7, line 17, it is stated that

“ . . . The invention contemplates the creation of a smaller diameter inner chamber, which may be defined by the insertion of a secondary, or curtain wall 21 . . . ”

In Claim 4, the Examiner takes issue with the term *optionally provided*. That term is no more indefinite than *may be provided* or similar phraseology simply indicating that it is an option and not a requirement. The same reference is in the specification in support of that phrase.

Claims 6, 7 and 12 are rejected apparently because of the phraseology “certain ones of said fans being turned off. . .”. Again, reference is made to page 7, beginning at line 17 through page 8, line 4.

Claim 10 is rejected on the basis that there is no antecedent basis for the reference to the “inner wall”. Claim 10 is dependent on Claim 4, which is in turn dependent upon Claim 1, which references an “inner wall”.



Finally, Claim 13 is rejected because the Examiner is apparently confused by the term "curtain wall". That claim is dependent on Claim 6 and reference to the secondary wall is found on page 7, lines 17 through 21.

Rejections based upon the prior were made under 35 U.S.C. 103(a). Claims 1 and 2 were rejected on that basis as being unpatentable over Kitchen, patent number 5,655,909, in view of Larsen, et al., patent number 6,378,361. The Examiner freely admits that most of the elements of the claim are found by combining these patents. It appears that the Examiner, all said and done, again questions the smoothness of the walls of Applicants' invention creating laminar flow. The Examiner takes the position that the walls [23] of Kitchen appear to be smooth and that by varying fan speeds, the diameter of the column of air will change at various points along the tunnel. First and foremost, the wall of Kitchen does not appear to be smooth at all, but rather a series of rectangles comprising a screen which protrudes out into the air stream. Moreover, while the Examiner may be of the opinion that varying the speed of the fans will change the column of air at various points along the tunnel, that is not what Applicants disclose. In fact, it is disclosed that the walls are smooth in order to create no impediment to air flow within the column of air, thus permitting laminar flow to be achieved. Moreover, there is nothing in Kitchen, nor in Larsen, which would suggest the value of laminar flow, or the capability of either of those patents, either singly or in combination, to create such flow, which Applicants claim as their invention.

This is not simply pie in the sky. The structure of Applicants' device is such as to be particularly useful for training purposes and for assisting the uninitiated, or at least the novices, in learning how to "fly" as that term is used in the art. These features are discussed in the specification, page 9, beginning on line 13. Once again, the Examiner appears to interpose his judgment, amply supported by hindsight, which is inappropriate in attempting to reconstruct the prior art to anticipate Applicants' device. See, for example, *Grain Processing Corp. v. American Maize-Products Co.*, 840, F.2d 902, 907.

Next, Claims 1 through 3, 6, 10, 11 and 13 were rejected as being obvious under 35 U.S.C. 103 as being unpatentable over Methfessel, et al., patent number 5,593,352, in view of Larsen. Once again, the Examiner finds that *most of* the elements of the claims are found in these references, and, once again, the Examiner notes that Methfessel does not expressly disclose laminar flow. However, he finds that such a disclosure would have been obvious to one skilled in the art, and that presumption is disputed on the same basis as referenced above with respect to Kitchen, et al.

The intent and purpose of Methfessel is to provide a mobile unit. There is nothing in that patent which would suggest the value of providing laminar flow and to do so would not add anything to Methfessel et al.'s disclosure. As is pointed out in Applicants' response of June 24, 2002, Methfessel may support one

flyer, but certain can not support one or more flyers. Once again, the Examiner has presumed something for which there is no basis in the art.

Claim 3, similarly, is rejected as unpatentable over Kitchen and Larsen in view of Methfessel, and the Examiner, once again, finds that *most of the elements* are present in these references. Where he can not find a basis, however, he finds it to be obvious. The arguments as presented above are equally applicable to this failing combination.

Claim 4 is found to be unpatentable over Kitchen under 35 U.S.C. 103. It is true that Kitchen shows a projection screen. However, Kitchen uses a backpack [50] on the flyer as the projector [54]. Applicants use a stationary projector and introduces blue screen technology to provide a more realistic and, therefore, more enjoyable, experience for the flyer. Claim 4 is dependent upon Claim 1, and Claim 1 is believed to be allowable, for the reasons stated above. The addition of blue screen technology does not somehow render Claim 4 unpatentable.

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Methfessel and Larsen in view of Louttit, UK patent number 2,062,557, as modified by Larsen. Again, the Examiner can only find *most of the elements* of the claim and finds those aspects of the claim which he can not find as simply being obvious. The introduction of the fan subsystem, supported by the disclosure on page 7, line 7 through page 8, line 4, does not somehow render Claim 1, upon which Claim 7 is dependent, suddenly unpatentable, and Claim 7 shares the

same disclosures as Claim 1. As pointed out in Applicants' response of June 24, 2002, that while Louttit discloses a series of fans, those fans are intended to vary the velocity and volume of air moved as distinguished from varying the column. As seen on page 1, beginning at approximately line 69, there is really nothing more than a single column of air provided in Louttit which, by virtue of its funnel shape, has a divergent cross section as it moves upwardly, thereby creating a velocity gradient. It is respectfully submitted that it simply would not be obvious, and that there is no basis in the art to suggest the obviousness which the Examiner exhorts.

Claims 8, 9 and 12 were rejected as being unpatentable over Methfessel and Larsen in view of Lenhart, patent number 6,042,490. As pointed out in Applicants' response of June 24, 2002, the structure of Lenhart is such that laminar flow is a virtual impossibility and, while the goals are outside of any air stream, Lenhart would not teach, or suggest, to one skilled in the art where, or how, to place the goals of Applicants in accordance with the claims and, thus, would not anticipate the claims. Claim 8 adds the goal to Claim 1 and simply suggests that a pair of opposed goals, as distinguished from a goal singular, is within the contemplation of the invention and Claim 12, which is dependent upon Claim 6 and ultimately Claim 1, simply adds fan controls. The basic underlying premise of Claim 1 remains untouched in light of the argument presented herein.

As stated in *Patent Law Fundamentals*, Second Edition, Part V, Chapter 16, section 16:52

"An Applicant for a United States patent has a *right* to a patent for his invention." citing *Application of Warner*, 54 C.C.P.A. 1628, 379 F.2d 101, 1017, 154 U.S.P.Q. (BNA) 173, 178 (1967). Emphasis in original.

In the same section, it was noted that:

"The examiner has the initial duty of supplying the factual basis for his rejection. The examiner may not, because he may doubt that the invention is patentable, resort to speculation, unfounded assumptions, or hindsight reconstruction to supply deficiencies in the factual basis of his rejection. The examiner may, however, rely at least initially, upon hearsay evidence. The applicant then has the right to investigate the hearsay evidence and introduce rebuttal evidence under 37 C.F.R. § 1.132. The final terms of a patent are gradually arrived at through a give and take negotiation process between the examiner and the applicant."

In the present instance, the Examiner's 103 rejections are based on surmise without any factual basis other than his own personal view of the matter. It is respectfully submitted that that is not the function of an examiner and that the

negotiation process between the Examiner and the Applicants has been cast aside in favor of the Examiner's personal view of the matter.

In his closing remarks, the Examiner finds that Applicants' arguments in their response of June 24, 2002, are moot in light of new grounds of rejection. Although he acknowledges that the grounds for rejection are new, he made the office action final, which effectively frustrates Applicants' response options and resulted in the generation of this appeal.

The inventors are students, who contemplated, prior to 9/11, the development of a serious entertainment venture which would include this novel free fall simulator. After 9/11, of course, the entire landscape for venture capital and for entertainment centers generally, changed dramatically. These young inventors, whoever, believe that they have a viable free fall simulator which is without precedent in the prior art. It is their intention to go forward with their project as the economy and the availability of discretionary dollars become more fluid.

For the many reasons set forth herein, it is respectfully requested that this appeal be granted; that the Examiner's rejection of the claims be overruled, and that the subject application issue.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. Haase', with a stylized flourish at the end.

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Registration No. 22,037  
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Fax: 374-4234  
Attorney for Applicants

## **APPENDIX**

1. In a free fall simulator wherein a cylindrical primary wall is provided, said primary wall defining a chamber, means for generating a column of air under pressure in said chamber, said column of air moving from bottom to top, the pressure being sufficient to support one or more flyers therein, said primary wall having a surface, said surface being contiguous with and defining the diameter of said column, the surface of said primary wall being smooth such that said column of air moves in laminar flow in at least an upstream portion of said column of air.

2. The free fall simulator of Claim 1 wherein the diameter of said column of air is variable within said chamber.

3. The free fall simulator of Claim 1 wherein a camera is provided within said chamber, said camera being remotely positionable and recessed out of said column of air to photograph said flyers against the background provided by the walls of said chamber.

4. The free fall simulator of Claim 1 wherein a secondary wall is optionally provided, said secondary wall having an inner surface, said inner surface



being of a pastel color so as to provide a background for use of blue screen technology.

6. The free fall simulator of Claim 2 wherein a secondary wall is provided, said secondary wall having a diameter less than said primary wall such that the placement of said secondary wall centrally within said chamber will reduce the diameter of said column of air.

7. The free fall simulator of Claim 1 wherein said air generating means is a series of contiguous fans, certain ones of said fans being turned off so that the only ones of said fans being operated are within the then current diameter of said chamber.

8. The free fall simulator of Claim 1 wherein at least one goal is provided within said chamber for use in playing games, all existing goals being recessed within the said wall defining said chamber.

9. The free fall simulator of Claim 1 wherein pairs of opposed goals are provided within said chamber for use in playing games, said goals being accessible through apertures within the said wall defining said chamber.

10. The free fall simulator of Claim 6 wherein the surface of said inner wall being of a pastel color so as to provide a background for use of blue screen technology.

11. The free fall simulator of Claim 6 wherein a camera is provided within said chamber, said camera being remotely positionable to photograph said flyers against the background provided by the walls of said chamber.

12. The free fall simulator of Claim 8 wherein said air generating means is a series of contiguous fans, certain ones of said fans being turned off so that the only ones of said fans being operated are within the then current diameter of said chamber.

13. The free fall simulator of Claim 6 wherein said secondary wall is a curtain wall.



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In Re The Application of

DAVID CARL and NATHAN GERSHON

Serial No. 09/716,045

Filed: November 20, 2000

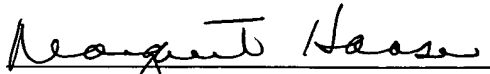
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APPEAL BRIEF ON BEHALF OF APPLICANTS

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John Gladstone Mills III, Robert C. Highley and Donald C. Reiley III  
Database updated March 2003

**Part V. Obtaining Patent Protection**  
**Chapter 16. Prosecuting Patent Applications**

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§ 16:52. REJECTIONS

An applicant for a United States patent has a *right* to a patent for his invention. [FN1] It should be noted that this status is in contradistinction to what was the status of an applicant for patent in the United Kingdom until the Patents Act 1977. Under prior British law, the granting of a patent was a matter of the Sovereign's grace and therefore a matter of *discretion*.

Before any United States patent issues, however, there must be at least apparent compliance with the requisites prescribed by law, as determined in first instance by the Patent & Trademark Office. Upon presentation to the Patent & Trademark Office of an application in the prescribed form, the applicant is *prima facie* entitled to a patent upon what he claims. However, upon the issuance of a rejection, it is incumbent upon the applicant to come forward and rebut or otherwise overcome the examiner's position.

The **examiner** has the initial duty of supplying the factual basis for his rejection. The **examiner** may not, because he may doubt that the invention is patentable, resort to speculation, unfounded assumptions or **hindsight** reconstruction to supply deficiencies in the factual basis of his rejection. [FN2] The **examiner** may, however, rely, at least initially, upon hearsay evidence. The applicant then has the right to investigate the hearsay evidence and introduce rebuttal evidence under 37 C.F.R. § 1.132. [FN3] The final terms of a patent are gradually arrived at through a give and take negotiation process between the **examiner** and the applicant. [FN4]

Much dispute and uncertainty has surrounded the extent to which the examiner's rejection must be overcome. For many years, courts reviewing Patent & Trademark Office patentability determinations invoked the "rule of doubt," which rule held that if the reviewing court, after consideration of everything made available to it by the record, was left in doubt about patentability (on any ground), such ultimate doubt should be "resolved" in favor of the applicant for the patent. [FN5] Resolving doubt as to patentability in favor of the applicant for the patent was deemed justified by the Court of Customs & Patent Appeals where a factual basis for an Office rejection under 35 U.S.C.A. § 102 or § 103 was lacking, in view of the language in 35 U.S.C.A. § 102 that "a person shall be entitled to a patent unless..." [FN6] Nevertheless, ever since a case in which the Patent & Trademark Office sought Supreme Court review of the viability of the rule of doubt, [FN7] it has not been *overtly* applied. Both the Court of Customs & Patent Appeals [FN8] and the Federal Circuit [FN9] have indicated that the "rule of doubt" is defunct. According to the Federal Circuit, to issue patents based on a rule of doubt would deprive the presumption of validity of its "legitimacy." [FN10] The presumption, however, is one of validity, not of infallibility. Applying or repudiating a rule of doubt is meaningless to the extent that some degree of doubt is necessarily inherent in every patentability determination. No patent can be held "valid" under all circumstances. [FN11]

In *ex parte* prosecution, it is immaterial whether the same or similar claims, or obvious claims, have been allowed to others. [FN12]

Broadly, the rejections that may be made against a claim fall into two categories: (1) those based on prior art; and (2) those not based on prior art. Even here there is overlap, because a claim may be so indefinite as to read on the prior art.

Claims are given their broadest reasonable interpretation during the prosecution of the patent application. [FN13] The Patent & Trademark Office is not required to interpret claims in the same manner as courts interpret claims in patent enforcement proceedings: [FN14]

It would be inconsistent with the role of the PTO to require it to interpret claims in the same manner as judges who operate under the assumption the patent is valid. The applicant has the obligation to establish entitlement to a patent. This promotes the development of the written record before the PTO that provides the requisite written notice to the public as to what the applicant invented.

Regarding an applicant's establishing its right to a patent, it will be noted that, just as there is a difference between claim construction in prosecution of applications before the Office and in patent enforcement proceedings before the courts, there may exist a difference between the Office's treatment of claims on *first* and *final* Office actions. In the spirit of requiring an applicant to establish entitlement to a patent and development of the written record before the Office, rejection of claims may be made on a first Office action which could not pass muster on appeal. At least before the advent of compact prosecution, first action allowances by **examiners** were generally frowned upon by the Office administration.

Application of the rule that during the prosecution of a patent application before the Patent & Trademark Office, claims will be interpreted as broadly as their terms reasonably allow, has been regarded as involving *not* reading into the claims limitations from the descriptive portion of the specification. [FN15] A statutory exception exists in regard to means-plus-function claims. [FN16]

The fact that an applicant can point to definitions or usages conforming to applicant's interpretation does not make the Patent & Trademark Office's definition unreasonable when the Office can point to other sources supporting its interpretation. [FN17]

If a claim is subject to two interpretations and one interpretation would render the claim unpatentable over the prior art, the proper course of action is for the **examiner** to enter two rejections: [FN18] (1) a rejection based on indefiniteness under 35 U.S.C.A. § 112, second paragraph, and (2) a rejection over the prior art based on the interpretation of the claims which render the prior art applicable. That 35 U.S.C.A. § 112, second paragraph, and 35 U.S.C.A. § 103 are interrelated has been judicially noted. [FN19] Nevertheless, a limitation though considered to be indefinite cannot be properly disregarded in a rejection based on prior art, as all words in a claim must be considered in judging the patentability of that claim against the prior art. If no reasonably definite meaning can be ascribed to certain terms in the claim, the subject matter does not become obvious, the claim becomes indefinite under 35 U.S.C.A. § 112, second paragraph. [FN20] If no reasonably definite meaning can be ascribed to certain language in the claims, the subject matter does not become obvious; [FN21] the claim becomes indefinite. [FN22] If the metes and bounds of the claimed invention are sufficiently unclear so as to require speculation as to the meaning of terms found therein, rejection under 35 U.S.C.A. § 103 and/or 35 U.S.C.A. § 112 cannot be supported. [FN23]

Prior art rejections are based on either 35 U.S.C.A. § 102 or 35 U.S.C.A. § 103. It should be noted that a patent claim that is invalid due to anticipation is also deemed invalid due to obviousness. [FN24] Anticipation is the epitome of obviousness. [FN25] The practice of *nominally* basing a rejection on 35 U.S.C.A. § 103 when, in fact, the actual ground of rejection is 35 U.S.C.A. § 102 has been judicially sanctioned, the court noting that anticipation is the ultimate or epitome of obviousness. [FN26]

Rejections not based on prior art may fall under 35 U.S.C.A. § 101, 35 U.S.C.A. § 112, or 35 U.S.C.A. § 132. In a few instances, rejections will be made without the invocation of a section of the Patent Act, recourse being had to some more general proposition of law, as, for example, rejections based upon *res judicata* or upon obviousness double patenting. [FN27]

In making rejections based on prior art, it is the practice to cite one or more patent or literature references as evidence of the state of the prior art alleged by the **examiner**. However, there may be instances in which a feature is so well known that the citation of a specific reference showing the same is deemed unnecessary. [FN28] In such a case, it is said that "official" or judicial notice is taken of the fact alleged to be notoriously well known. [FN29] An examiner may also reject claims on the basis of prior art within his *own personal knowledge* [FN30] by preparing an affidavit setting forth such facts. [FN31] Whenever a piece of prior art is relied on to support a rejection, whether or not in a "minor capacity," there would appear to be no excuse for not positively including that prior art reference in the statement of rejection. [FN32]

Prior art references are *evidence* upon which rejections for lack of novelty and obviousness are based. [FN33] References must be considered for all that they teach. [FN34] The disclosure of a reference must be taken at its face value in the absence of evidence or reasoning inconsistent therewith. [FN35] It is improper to reject claims solely on an applicant's own showing of equivalence. [FN36]

What may be cited as a reference under 35 U.S.C.A. § 103 does not always coincide with what may be applied under 35 U.S.C.A. § 102. For example, a drawing made in a foreign country before patent owner's invention date, while held inadmissible under 35 U.S.C.A. § 102, was held admissible under 35 U.S.C.A. § 103 to prove obviousness. In the same case a patent whose application was filed one day after the patent owner's invention date was deemed available as a prior art reference with respect to obviousness. [FN37] However, the Court of Customs & Patent Appeals has held that a patent whose application was filed on the same day as appellant's application could not be taken as evidence of the level of skill in the art on the day appellant filed his application but only as evidence of the level of skill of that patentee. [FN38]

The art or technology to which the claimed subject matter pertains rather than a dictionary should be looked to for the meaning of expressions in a patent application. [FN39]

Design patents are properly citable as prior art against the claims of a utility patent application for all that it discloses. [FN40] The use of a patent as a prior art reference is not limited to what is claimed in such patent or to what is otherwise described therein as the patentee's own invention or to problems with which the patentee is concerned. On the contrary, a patent is part of the literature of the art and is relevant for all that it contains. [FN41]

[FN1]. *See* U.S. v. American Bell Tel. Co., 128 U.S. 315, 363, 9 S. Ct. 90, 32 L. Ed. 450 (1888).

[FN2]. *Application of Warner*, 54 C.C.P.A. 1628, 379 F.2d 1011, 1017, 154 U.S.P.Q. (BNA) 173, 178 (1967).

[FN3]. *In re Epstein*, 32 F.3d 1559, 31 U.S.P.Q.2d (BNA) 1817, 1821, 40 Fed. R. Evid. Serv. 773 (Fed. Cir. 1994). *See* § 16:54, *infra*.

[FN4]. *Kaiser Industries Corp. v. Jones & Laughlin Steel Corp.*, 181 U.S.P.Q. (BNA) 193, 215, 1974 WL 20325 (W.D. Pa. 1974), *rev'd on other grounds*, 515 F.2d 964, 185 U.S.P.Q. (BNA) 343 (3d Cir. 1975), *opinion amended on other grounds*, 524 F.2d 1154 (3d Cir. 1975).

[FN5]. *Application of Naber*, 503 F.2d 1059, 1059-60, 183 U.S.P.Q. (BNA) 245, 246 (C.C.P.A. 1974).

[FN6]. *Application of Warner*, 54 C.C.P.A. 1628, 379 F.2d 1011, 1016, 154 U.S.P.Q. (BNA) 173, 177 (1967).

[FN7]. Application of Hofstetter, 53 C.C.P.A. 1545, 362 F.2d 293, 298, 150 U.S.P.Q. (BNA) 105, 109 (1966), cert. granted, 386 U.S. 990, 87 S. Ct. 1304, 18 L. Ed. 2d 333, 153 U.S.P.Q. (BNA) 888 (1967) and judgment vacated on other grounds, 389 U.S. 5, 88 S. Ct. 29, 19 L. Ed. 2d 5, 155 U.S.P.Q. (BNA) 289 (1967). See generally Lambert, "Patentability--Rule of Doubt," 12 IDEA 703 (1968); W. Becker & S. Heller, "The 'Rule of Doubt' . . . In re Hofstetter," 49 J. Pat. Off. Soc'y 607 (1967).

[FN8]. Application of Mixon, 59 C.C.P.A. 1396, 470 F.2d 1374, 1378, 176 U.S.P.Q. (BNA) 296, 299 (1973).

[FN9]. In re Etter, 756 F.2d 852, 858, 225 U.S.P.Q. (BNA) 1, 5 (Fed. Cir. 1985); In re Andersen, 743 F.2d 1578, 1580, 223 U.S.P.Q. (BNA) 378, 379-80 (Fed. Cir. 1984).

[FN10]. In re Andersen, 743 F.2d 1578, 1580, 223 U.S.P.Q. (BNA) 378, 380 (Fed. Cir. 1984).

[FN11]. Stevenson v. Sears, Roebuck & Co., 713 F.2d 705, 711, 218 U.S.P.Q. (BNA) 969, 974 (Fed. Cir. 1983).

[FN12]. Application of Wertheim, 541 F.2d 257, 264, 191 U.S.P.Q. (BNA) 90, 97 (C.C.P.A. 1976) (same or similar claims); Application of Giolito, 530 F.2d 397, 400, 188 U.S.P.Q. (BNA) 645, 648 (C.C.P.A. 1976).

[FN13]. In re Weiss, 989 F.2d 1202, 26 U.S.P.Q.2d (BNA) 1885, 1887 (Fed. Cir. 1993); In re Zletz, 893 F.2d 319, 13 U.S.P.Q.2d (BNA) 1320 (Fed. Cir. 1989); In re Sneed, 710 F.2d 1544, 1548, 218 U.S.P.Q. (BNA) 385, 388 (Fed. Cir. 1983); In re Heck, 699 F.2d 1331, 1332, 216 U.S.P.Q. (BNA) 1038, 1039 (Fed. Cir. 1983); In re Meyer, 688 F.2d 789, 795-96, 215 U.S.P.Q. (BNA) 193, 198-99 (C.C.P.A. 1982); Application of Hiroshi Tanaka, 551 F.2d 855, 860, 193 U.S.P.Q. (BNA) 138, 141 (C.C.P.A. 1977); Application of Herz, 537 F.2d 549, 551, 190 U.S.P.Q. (BNA) 461, 463 (C.C.P.A. 1976); Application of Mott, 539 F.2d 1291, 1296, 190 U.S.P.Q. (BNA) 536, 541 (C.C.P.A. 1976); Application of Okuzawa, 537 F.2d 545, 548, 190 U.S.P.Q. (BNA) 464, 466 (C.C.P.A. 1976); Application of Pearson, 494 F.2d 1399, 1404, 181 U.S.P.Q. (BNA) 641, 645 (C.C.P.A. 1974); Application of Saether, 492 F.2d 849, 181 U.S.P.Q. (BNA) 36, 39 (C.C.P.A. 1974); Application of Prater, 56 C.C.P.A. 1381, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. (BNA) 541, 550-51, 6 A.L.R. Fed. 134 (1969); Application of Tibbals, 50 C.C.P.A. 1260, 316 F.2d 955, 958, 137 U.S.P.Q. (BNA) 565, 567 (1963); Ex Parte Lawrence, 131 U.S.P.Q. (BNA) 40, 41, 1961 WL 7822 (Pat. & Trademark Office Bd. App. 1961). See §§ 8:5, 15:27, *supra*.

[FN14]. In re Morris, 127 F.3d 1048, 1054, 44 U.S.P.Q.2d (BNA) 1023, 1028 (Fed. Cir. 1997).

[FN15]. Application of Winkhaus, 527 F.2d 637, 639, 188 U.S.P.Q. (BNA) 129, 131 (C.C.P.A. 1975); Ex Parte Novitski, 26 U.S.P.Q.2d (BNA) 1389, 1391, 1993 WL 134815 (Bd. Pat. App. & Interferences 1993).

[FN16]. In re Bond, 910 F.2d 831, 833, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990). See § 15:34, *supra*.

[FN17]. In re Morris, 127 F.3d 1048, 44 U.S.P.Q.2d (BNA) 1023, 1029 (Fed. Cir. 1997). See § 15:34, *supra*.

[FN18]. Ex Parte Ionescu, 222 U.S.P.Q. (BNA) 537, 540, 1984 WL 63050 (Pat. & Trademark Office Bd. App. 1984).

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[FN19]. Application of Muchmore, 58 C.C.P.A. 719, 433 F.2d 824, 824-25, 167 U.S.P.Q. (BNA) 681, 682 (1970).

[FN20]. Application of Wilson, 57 C.C.P.A. 1029, 424 F.2d 1382, 1385, 165 U.S.P.Q. (BNA) 494, 496 (1970).

[FN21]. Ex Parte Oetiker No. 88-3256, 23 U.S.P.Q.2d (BNA) 1651, 1661, 1990 WL 391124 (Bd. Pat. App. & Interferences 1990), *aff'd*, 951 F.2d 1267, 23 U.S.P.Q.2d (BNA) 1661 (Fed. Cir. 1991).

[FN22]. Application of Wilson, 57 C.C.P.A. 1029, 424 F.2d 1382, 1385, 165 U.S.P.Q. (BNA) 494, 496 (1970); Application of Steele, 49 C.C.P.A. 1295, 305 F.2d 859, 862-63, 134 U.S.P.Q. (BNA) 292, 295 (1962).

[FN23]. Ex Parte Head, 214 U.S.P.Q. (BNA) 551, 553, 1981 WL 46260 (Pat. & Trademark Office Bd. App. 1981).

[FN24]. C. Van Der Lely N.V. v. F. Lli Maschio S.n.c., 221 U.S.P.Q. (BNA) 34, 44, 1983 WL 62369 (S.D. Ohio 1983).

[FN25]. *See* § 10:1, *supra*.

[FN26]. Application of Pearson, 494 F.2d 1399, 1403, 181 U.S.P.Q. (BNA) 641, 644 (C.C.P.A. 1974); Application of Kalm, 54 C.C.P.A. 1466, 378 F.2d 959, 962, 154 U.S.P.Q. (BNA) 10, 12 (1967).

[FN27]. Ex Parte Haas, 188 U.S.P.Q. (BNA) 374, 376-77, 1975 WL 20844 (Pat. & Trademark Office Bd. App. 1975), *rev'd* on other grounds, 580 F.2d 461, 198 U.S.P.Q. (BNA) 334 (C.C.P.A. 1978).

[FN28]. Application of Fox, 471 F.2d 1405, 1407, 176 U.S.P.Q. (BNA) 340, 341 (C.C.P.A. 1973).

[FN29]. Manual of Patent Examining Procedure § 2144.031. *See generally* L.L. Barry, "Did You Ever Notice? Official Notice in Rejections," 81 J. Pat. & Trademark Off. Soc'y 129 (1999); J.R. Steyn, "Common Knowledge as the Basis for Obviousness," 54 J. Pat. Off. Soc'y 54 (1972). *See* § 10:15, *supra*.

[FN30]. Nichols v. Sayman Et Al., 210 U.S.P.Q. (BNA) 301, 1979 WL 24797 (Comm'r Pat. & Trademarks 1979).

[FN31]. 37 C.F.R. § 1.107; Manual of Patent Examining Procedure § 1105.02.

[FN32]. Application of Hoch, 57 C.C.P.A. 1292, 428 F.2d 1341, 1342, 166 U.S.P.Q. (BNA) 406, 407 (1970).

[FN33]. Application of Carreira, 532 F.2d 1356, 1358, 189 U.S.P.Q. (BNA) 461, 463 (C.C.P.A. 1976).

[FN34]. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1550, 220 U.S.P.Q. (BNA) 303, 311 (Fed.

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Cir. 1983).

[FN35]. In re Donohue, 632 F.2d 123, 126, 207 U.S.P.Q. (BNA) 196, 199 (C.C.P.A. 1980); Ex Parte Naujoks, 17 U.S.P.Q.2d (BNA) 1537, 1539, 1989 WL 274439 (Bd. Pat. App. & Interferences 1989).

[FN36]. Application of Ruff, 45 C.C.P.A. 1037, 256 F.2d 590, 596-97, 118 U.S.P.Q. (BNA) 340, 346 (1958).

[FN37]. Satco, Inc. v. Transequip, Inc., 191 U.S.P.Q. (BNA) 253, 1975 WL 21068 (C.D. Cal. 1975).

[FN38]. Application of Gunn, 537 F.2d 1123, 190 U.S.P.Q. (BNA) 402 (C.C.P.A. 1976).

[FN39]. Application of Salem, 553 F.2d 676, 682, 193 U.S.P.Q. (BNA) 513, 518 (C.C.P.A. 1977).

[FN40]. Application of Aslanian, 590 F.2d 911, 200 U.S.P.Q. (BNA) 500 (C.C.P.A. 1979).

[FN41]. In re Heck, 699 F.2d 1331, 795-96, 216 U.S.P.Q. (BNA) 1038, 1039 (Fed. Cir. 1983); Application of Lemelson, 55 C.C.P.A. 1294, 397 F.2d 1006, 1009, 158 U.S.P.Q. (BNA) 275, 277 (1968).

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Supreme Court of the United States

DIAMOND RUBBER COMPANY OF NEW  
YORK, Petitioner,

v.

CONSOLIDATED RUBBER TIRE COMPANY  
and Rubber Tire Wheel Company.

No. 36.

Argued February 28 and March 1, 1911.  
Decided April 10, 1911.

ON WRIT of Certiorari to the United States Circuit Court of Appeals for the Second Circuit to review a decree which affirmed, with a slight modification, a decree of the Circuit Court for the Southern District of New York, enjoining the infringement of a patent. Affirmed.

See same case below, 89 C. C. A. 582, 162 Fed. 892.

The facts are stated in the opinion.

#### West Headnotes

#### **Evidence** ⚡66

157k66 Most Cited Cases

Ignorance on the part of the patentee of a combination of the manner of the operation of the elements which he has combined will not readily be inferred.

#### **Patents** ⚡35

291k35 Most Cited Cases

Commercial success should be considered.

#### **Patents** ⚡36(2)

291k36(2) Most Cited Cases

The widespread commercial success of a patented device should be taken into consideration in determining the question of invention.

#### **Patents** ⚡26(1)

291k26(1) Most Cited Cases

(Formerly 291k44)

Combination patent, is not devoid of invention because inventor did not know all forces which he had brought into operation.

#### **Patents** ⚡49

291k49 Most Cited Cases

The utility of a patented device may be attested by the litigation over it.

#### **Patents** ⚡99

291k99 Most Cited Cases

A combination patent for an article which, when constructed in accordance with the specifications, has proved a great commercial success, may not be held devoid of invention because the inventor may not have known all of the forces which he had brought into operation.

#### **Patents** ⚡305

291k305 Most Cited Cases

(Formerly 291k323)

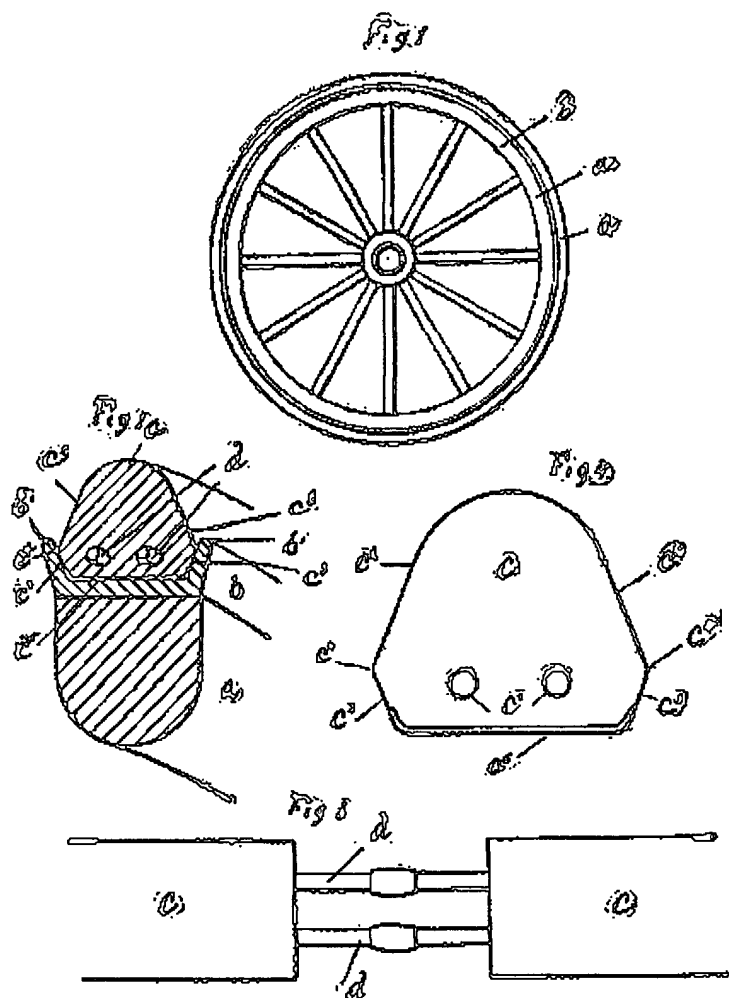
A decree enjoining the infringement of a patent for an improvement in rubber-tired wheels, which has been held invalid in other federal circuits, need not go further than to except from its operation the handling, using, or selling of tires and rims authorized by the decree invalidating the patent, and may reserve until the question properly arises on the facts the determination of the defendant's right to handle or sell other tires or rims throughout those circuits.

**\*\*444 \*429 Mr. Charles K. Offield** for petitioner.

Messrs. **Frederick P. Fish**, C. W. Stapleton, J. L. Stackpole, Thomas W. Bakewell, and Staley & Bowman for respondents.

Mr. Justice **McKenna** delivered the opinion of the court:

Writ of certiorari to review a decree of the circuit court of appeals of the second circuit, sustaining a patent for an improvement in rubber tires, issued to Arthur W. Grant, February 18, 1896. The patent, and those which it is contended anticipate it, have



**\*\*446 \*432** These figures explain themselves, but we copy the following from the specifications:

'In the accompanying drawings, Fig. 1 is a side elevation of a wheel embodying my invention. Fig. 2 is a sectional elevation of the wheel rim, shown partly in perspective. Fig. 3 is a partial longitudinal section through the tire, showing the openings for the retaining wires. **\*433** Fig. 4 is a transverse sectional view of the rubber tire in detail.'

It is conceded that the claims are narrow, counsel saying that they are 'limited closely to the specific construction of the Grant tire as it is actually shown and described in the patent.' And a right to equivalents is disclaimed. Indeed, a certain merit is

made of this as exhibiting at once the simplicity and perfection of the invention and the tribute paid to its excellence by respondent by exactly imitating it, instead of attempting to evade it. It is pointed out that the coaction of the parts is so dependent upon their shape and relation that any alteration destroys their co-operation and the utility of the tire. There is strength in the contention, as we shall presently see.

Anticipating somewhat, we may say that the tire has utility is not disputed; to what its utility is to be attributed is in controversy. The respondents the tire company contend that the tire is at once firm and mobile in its channel, 'creeps' (moves slowly around the edge of the rim), and will yield laterally, and thus the lateral blows against it will be cushioned. It

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(Cite as: 220 U.S. 428, 31 S.Ct. 444)

is further contended that if the tire be 'tipped from its seat in the channel by a side blow' it 'automatically restores itself to normal position when the side pressure is released.' In other words, and in the language of one **\*447** of the expert witnesses, the tire has the capacity to rise and fall and reseal itself under lateral strain; that is, to rise slightly from the rim on one side, independently of the other, when subjected to very great strain, and immediately reseal itself when such strain is removed. 'It must be borne in mind,' counsel say, 'that the Grant tire is not cemented into the channel. This is an essential and important point. Any tire that is cemented in its channel is rigid and cannot 'creep' or yield to lateral blows. It is therefore easily and quickly destroyed. The absence of cement in the Grant tire is a vital characteristic.' And, further, that Grant, **\*434** 'by omitting the cement, and by permitting the tire to tip, to creep, and to move in its channel, obtained a radically new and useful result.' And it is insisted that this results because the tire is a new and patentable combination of parts, coacting in the manner of a true combination to produce a new and useful result, and is not an aggregation of old elements or parts, each performing its own function and nothing more. These propositions are combated by the rubber company, and it is insisted that the testimony is 'conclusive and uncontradicted that the Grant tire, clamped to the tire or rim by the straining tension of the two wires,' has not the capacity attributed to it, 'and never could have.' And it is said that 'it is manifest that this question can be easily determined as a question of fact,' and that the testimony 'proves such asserted movement a myth and a fallacy.' And it is urged that such capacity in the tire is not recited in the specifications of the patent, and was unknown to Grant.

This tipping capacity is made the pivot of the controversy. It was as to that that the courts of appeals of the sixth and second circuits disagreed either upon the difference of the testimony in the cases, or more deeply, on principle. The controversy and Grant's alleged ignorance of the tipping characteristic of the tire really present some anomaly. The tire has utility, a utility that has secured an almost universal acceptance and employment of it, as will subsequently appear. It was certainly not an exact repetition of the prior art. It attained an end not attained by anything in the prior art, and has been accepted as the termination of the struggle for a completely successful tire. It

possesses such amount of change from the prior art as to have received the approval of the Patent Office, and is entitled to the presumption of invention which attaches to a patent. Its simplicity should not blind us as to its character. Many things, **\*435** and the patent law abounds in illustrations, seem obvious after they have been done, and, 'in the light of the accomplished result,' it is often a matter of wonder how they so long 'eluded the search of the discoverer and set at defiance the speculations of inventive genius.' *Pearl v. Ocean Mills*, 2 Bann. & Ard. 469, Fed. Cas. No. 10,876, 11 Off. Gaz. 2. Knowledge after the event is always easy, and problems once solved present no difficulties, indeed, may be represented as never having had any, and expert witnesses may be brought forward to show that the new thing which seemed to have eluded the search of the world was always ready at hand and easy to be seen by a merely skillful attention. But the law has other tests of the invention than subtle conjectures of what might have been seen and yet was not. It regards a change as evidence of novelty, the acceptance and utility of change as a further evidence, even as demonstration. And it recognizes degrees of change, dividing inventions into primary and secondary, and as they are, one or the other, gives a proportionate dominion to its patent grant. In other words, the invention may be broadly new, subjecting all that comes after it to tribute (*Chicago & N. W. R. Co. v. Sayles*, 97 U. S. 554, 556, 24 L. ed. 1053, 1054); it may be the successor, in a sense, of all that went before, a step only in the march of improvement, and limited, therefore, to its precise form and elements, as the patent in suit is conceded to be. In its narrow and humble form it may not excite our wonder as may the broader or pretentious form, but it has as firm a right to protection. Nor does it detract from its merit that it is the result of experiment and not the instant and perfect product of inventive power. A patentee may be baldly empirical, seeing nothing beyond his experiments and the result; yet if he has added a new and valuable article to the world's utilities, he is entitled to the rank and protection of an inventor. And how can it take from his merit that he may not know all of the forces which he has brought into operation? It is certainly **\*436** not necessary that he understand or be able to state the scientific principles underlying his invention, and it is immaterial whether he can stand a successful examination as to the speculative ideas involved. *Andrews v. Cross*,

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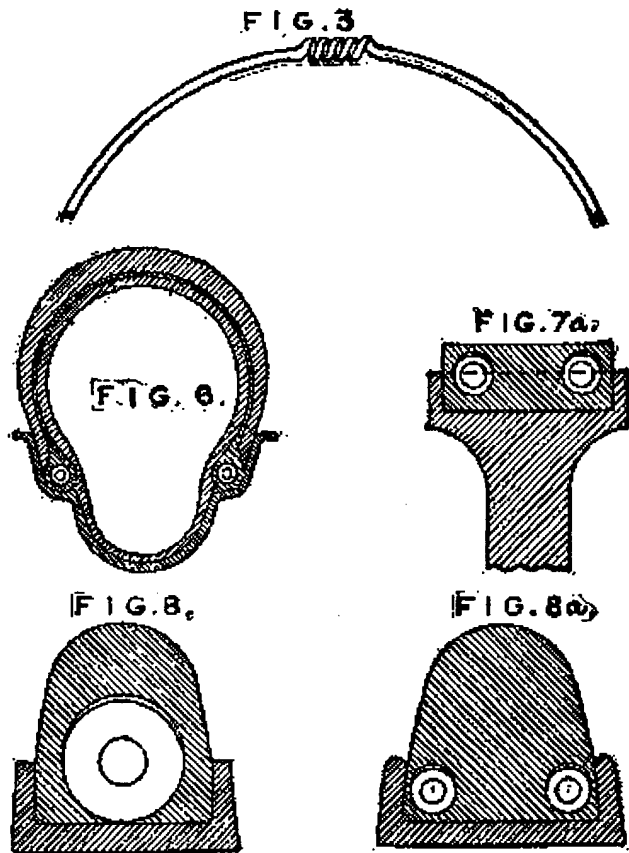
19 Blatchf. 294, 8 Fed. 269; Eames v. Andrews, 122 U. S. 40, 55, 30 L. ed. 1064, 1069, 7 Sup. Ct. Rep. 1073; St. Louis Stamping Co. v. Quinby, 4 Ban. & Ard. 192, Fed. Cas. No. 12,240, 16 Off. Gaz. 135; Pfeifer v. Dixon-Woods Co. 5 C. C. A. 148, 14 U. S. App. 245, 55 Fed. 390; **\*\*448** Cleveland Foundry Co. v. Detroit Vapor Stove Co. (C. C. A. 6th C.) 68 C. C. A. 233, 131 Fed. 853; Van Epps v. United Box Board & Paper Co. (C. C. A. 2d C.) 75 C. C. A. 77, 143 Fed. 869; Westmoreland Specialty Co. v. Hogan (C. C. A. 3d C.) 93 C. C. A. 31, 167 Fed. 327. He must, indeed, make such disclosure and description of his invention that it may be put into practice. In this he must be clear. He must not put forth a puzzle for invention or experiment to solve, but the description is sufficient if those skilled in the art can understand it. This satisfies the law, which only requires as a condition of its protection that the world be given something new and that the world be taught how to use it. It is no concern of the world whether the principle upon which the new construction acts be obvious or obscure, so that it inheres in the new construction.

This discussion may be broader than the contention of the rubber company requires; indeed, may imply a misunderstanding of it. The contention may only mean that Grant did not discern the manner of the operation of the elements which he combined, and therefore did not really invent anything, only assembled old elements, changing their relations somewhat, and retaining their essential character and effect. We should be slow to infer such ignorance. It is difficult to suppose that the contriver of a successful device did not understand how it operated; that he saw nothing in it, and committed it to the world without seeing anything in it but a composition of wood, rubber, and iron in certain relations, without understanding or attempting to discover the law and principle of its organization **\*437** and efficiency. Grant's situation demanded caution and knowledge. He was confronted by what has been termed a 'crowded' prior art; he might expect to encounter litigation, and, even before litigation, he would have to satisfy the Patent Office of the novelty and utility of his device, and it is hard to believe that he did not know the co-operating law of the elements which he had combined, and only unconsciously made use of it. We find the contention difficult to handle. When a person produces useful instrument, to say that he

did not know what he was about is at least confusing. To take from him the advantage of it upon nice speculation as to whether it was an ignorant guess or confident knowledge and adaptation might do him great injustice. His success is his title to consideration.

In our decision thus far we have assumed that the Grant tire is an invention; but as that is disputed, we must examine its right to such distinction. The rubber company denies invention to it, and, considering that its pretension to such quality depends upon the possession of tipping power (including in this reseating power), contests the existence of such power; and, even granting its existence, it is yet contended that anticipation may be demonstrated. In other words, it is insisted that if tipping power exist in the Grant patent, it existed in prior patents, and that 'the old art was crowded with numerous prototypes and predecessors of this Grant tire, with every thought and suggestion of novelty and utility that can be found in drawings and specifications of the Grant patent, or in the idealized contentions as to the patent by the visions and dreams of the experts and counsel for the patent.'

Two patents are selected to sustain the contention, out of what are said to be a large number of United States and foreign patents, with the comment that 'if they do not show anticipation, none of the others will show it, and if they do anticipate the Grant patent, it is entirely immaterial **\*438** whether the others do or not.' They are both English patents issued to Frank Stanley Willoughby. We copy from the rubber company's brief the figures of the patent 5,924.



**\*\*449** The following is the explanation given by counsel of the figures:

'The drawings of the Willoughby patent of March 26, 1892, No. 5,924, as to the flanged channel, show the flanges in three different positions as to the solid rubber tire. Fig. 8 shows the flange at right angles of the rim; Fig. 8a \*439 shows the flanges somewhat inwardly inclined with the two retaining wires, and Fig. 7a shows the flanges vertical with two retaining wires, the retaining wires in Fig. 8a being below the outer periphery of the flanges, and the two retaining wires of Fig. 7a being centrally located, as to their openings, with the periphery of the flanges. In Fig. 6, however, which is a pneumatic tire (a tire when highly inflated is as solid as a rubber tire), the flanges are outwardly flaring, and the two retaining wires are substantially below the periphery of the flanges.'

There are resemblances and differences in the figures to those of the Grant patent, and we have let the rubber company set forth the resemblances. The differences are substantial. To represent them we cannot do better to quote the description given of them by Judge Thomas (91 Fed. 988), as follows:

'The Willoughby patent, No. 5,924, Fig. 8a, shows in combination wire connections, also described in the specification, very similar, save in location, to those used by Grant, and the figure shows also a very slight angle located slightly within the flanges. The rim, however, is of the clinger variety; that is, the flanges incline inwardly, and bind the rubber on each side. Such a tire thwarts the lateral play otherwise permitted to the rubber by the wires, and, although almost imperceptible angles appear, made by the sides of the rubber, they are not sufficient to give the immunity resulting from a well-defined angle whose vertex is within the flaring rim. Figures

5a and 5c show rims shaped like the segment of a circle, in which are seated spherical rubbers held in place by a single wire. The rim is described in the specifications as U or V-shaped. A V-shaped rim must have flaring flanges, but the rim is quite **\*450** unlike that employed by Grant, and in the entire absence of the angle the functions attributed to the Grant tire seem to be absent. Indeed, the freedom of action permitted by the wire in the rim used by Grant seems to **\*440** be denied the tire, for the reason that the rubber is confined by the V-shaped channel.

'The Willoughby patent, No. 18,030, shows wire connection, flaring flanges, and angle (see Figs. 26, 30, 31), and in mere coincidence of parts seems to be the nearest approach to the Grant tire. But look at these figures, and all possible conception of coincidence of function is dissipated at once. There is the flaring rim, in which is seated a rubber upon which is placed a steel outer tire, through which pass the openings and wires. The angle is far without the upper edges of the rim, and it appears that neither function ascribed to the Grant tire is obtained.'

Willoughby patent No. 18,030, has no relevancy whatever. It is true it has flanges upon the rim, flaring and at right angles, and it is illustrated by figures showing what may be called retaining wires, to quote from the brief of counsel, 'above the periphery of the flanges, another substantially on a line with the periphery of the flanges, and three of the figures showing the retaining wires substantially below the periphery of the respective flanges.' It is manifest that the relation of the retaining wires to the periphery of the flanges is absolutely unimportant in the tire. Willoughby, describing his invention, says: 'The object of my present invention is, as in my previous one, to provide a metallic outer tire or armor to rubber which is of itself flexible.' The retaining wires hold the metallic exterior to the rubber bed.

The utility of the Grant patent, therefore, was not attained in the Willoughby patent. The rubber company's conduct is confirmation of this. It uses the Grant tire, as we shall presently see, not the Willoughby tires. Let it be granted that they afforded suggestions to Grant, and that he has gone but one step beyond them. It is conceded, as we have said, that his invention is a narrow one,--a step

beyond the prior art,--built upon it, it may **\*441** be, and only an improvement upon it. Its legal evasion may be the easier (*Chicago & N. W. R. Co. v. Sayles*, 97 U. S. 554, 556, 24 L. ed. 1053, 1054), and hence we see the strength of the concession to its advance beyond the prior art and of its novelty and utility by the rubber company's imitation of it. The prior art was open to the rubber company. That 'art was crowded,' it says, 'with numerous prototypes and predecessors' of the Grant tire, and they, it if insisted, possessed all of the qualities which the dreams of experts attributed to the Grant tire. And yet the rubber company uses the Grant tire. It gives the tribute of its praise to the prior art; it gives the Grant tire the tribute of its imitation, as others have done. And yet the narrowness of the claims seemed to make legal evasion easy. Why, then, was there not evasion by a variation of the details of the patented arrangement? Business interests urged to it as much as to infringement. We can find no answer except that given by the tire company: 'The patented organization must be one that is essential. Its use in the precise form described and shown in the patent must be inevitably necessary.'

That the tire is an invention is fortified by all of the presumptions,--the presumption of the patent by that arising from the utility of the tire. And we have said that the utility of a device may be attested by the litigation over it, as litigation 'shows and measures the existence of the public demand for its use.' *Eames v. Andrews*, 122 U. S. 40, 53, 30 L. ed. 1064, 1069, 7 Sup. Ct. Rep. 1073. We have shown the litigation to which the grant tire has been subjected.

We have taken for granted in our discussion that the Grant tire immediately established and has ever since maintained its supremacy over all other rubber tires, and has been commercially successful while they have been failures. The assumption is justified by the concession of counsel. They do not deny the fact, but attribute it to 'three subsequent discoveries and conditions' since the **\*442** Grant patent, these being--(1) 'that the tire can be held in place and fixed upon its base by straining the wires to a clamping point; (2) the production, by mechanical means, cheaply and expeditiously as a commercial product, of the channel rim in straight lengths, to be applied to the wheel; and (3) the improvement of the rubber itself; the demand of the public for a solid rubber tire, and the wealth of the complainant,

advertising in the market, and pushing and exploiting the tire.'

The first ground is a somewhat distant assertion that the tire does not involve invention, but as to that we have sufficiently expressed opinion. The second ground is an inversion of cause and effect, and there is an obvious answer to the third ground. Without suitable rubber, there could have been no rubber tires, and the desire for them necessarily induced their manufacture, and Grant exercised invention to produce an efficient one. We can understand that some advertising was necessary to bring it into notice, and give it a certain **\*\*451** use, but the extensive use which it attained, and more certainly the exclusive use which it attained, could only have been the result of its essential excellence, indeed, its pronounced superiority over all other forms. Here, again, in our discussion, a comparison is suggested between it and other tires, and the inquiry occurs why capital has selected it to invest in and advertise, and not one of the tires of the prior art, if it be not better than they? But the effect of advertising is mere speculation; to the utility and use of an article the law assigns a definite presumption of its character, as we have seen, and which we are impelled by the facts of this record to follow.

To what quality the utility of the tire may be due will bear further consideration, if for no other reason than the earnest contentions of counsel. Aside from those contentions and the ability by which they are supported, we might point to what it does as a demonstration of its difference **\*443** from all that preceded it, that there is something in it, attribute or force, which did not exist before,--something which is the law of its organization and function, and raises it above a mere aggregation of elements to a patentable combination. And we may say, in passing, the elements of a combination may be all old. In making a combination the inventor has the whole field of mechanics to draw from. *Leeds & C. Co. v. Victor Talking Mach. Co.* 213 U. S. at page 318, 53 L. ed. 812, 29 Sup. Ct. Rep. 495.

The tire company gives a definition of the 'something' as tipping and reseating power. The rubber company earnestly denies the existence of the power, and, as we have seen, the courts of appeals of the sixth and second circuits divided in

opinion on its existence. We think such power is possessed by the tire. This is shown by the evidence, and was shown at the oral argument. And it is the result of something more than each element acting separately. It is not the result alone of the iron channel with diverging sides, nor alone of the retaining bands or the rubber. They each have uses and perform them to an end different from the effect of either, and they must have been designed to such end,--contrived to exactly produce it. There can be no other deduction from their careful relation. The adaptation of the rubber to the flaring channel, the shape of that permitting lateral movement and compression, the retaining band, holding and yielding, placed in such precise adjustment and correlation with the other parts, producing a tire that 'when compressed and bent sidewise shall not escape from the channel, and shall not be cut on the flange of the channel,' and yet shall 'be mobile in the channel.' We agree with the court of appeals that 'this was not the result of chance or the haphazard selection of parts; his [Grant's] success could only have been achieved by a careful study of the scientific and mechanical problems necessary to overcome the defects which rendered the then-existing tires **\*444** ineffective and useless.' [80 C. C. A. 590, 151 Fed. 238.] This conclusion is not shaken by the testimony and argument urged against it.

The contention of noninfringement is very hesitatingly advanced,--suggested rather than urged. It is conceded that infringement existed in the prior litigations, but it is said that, if, under the closer analysis of the Grant patent 'as here presented, and as considered as contended for, if to be confined to exact angles and relations of angles and precise configuration of parts,'--the rubber company's device does not infringe. And this is attempted to be supported by the testimony of a witness who found, he said, in the rubber company's tire, 'the three fundamental mechanical elements' of the Grant patent in suit, which, he interjected, were borrowed by Grant, 'both individually and in combination, from the prior art long antedating his alleged invention,' and then proceeded to declare a difference between the 'angles and relations of angles and precise configuration of parts,' to use counsel's language, of the two tires, and briefly summarizing his conclusion, said that he did not 'find the alleged invention, combinations, and devices of either of the claims of the Grant patent in



suit embodied in or contained in either of the exhibits introduced in evidence professing to represent the defendant's tire.' We are unable to concur in the conclusion. The exhibits demonstrate the contrary. And we are fortified in this by the conduct of the rubber company in the circuit court. The defense of nonfringement was not there seriously urged. After considering to what extent the case, as presented, differed from the prior litigation, Judge Holt said: 'Of course, if your defense was that this defendant does not infringe, that would be an entirely different question; but the only question argued here is as to the validity of the patent.' In the opinion of the court of appeals, noninfringement received no attention; presumably because that defense was not pressed upon it.

\*445 The final contention of the rubber company is that, the Grant patent having been declared invalid by the circuit court of appeals of the sixth circuit and by the circuit court for the district of Indiana in \*\*452 the seventh circuit, the rubber company should not have been enjoined from the handling or sale of tires manufactured in the sixth and seventh circuits, and cites *Kessler v. Eldred*, 206 U. S. 285, 51 L. ed. 1065, 27 Sup. Ct. Rep. 611.

The court of appeals practically reserved the question. It modified the decree of the circuit court so far as it prevented the handling, using, or selling tires and rims authorized by any judicial decree, recognizing, as it said, the applicability of *Kessler v. Eldred*. But it is further said:

'Whether it should be given a broader interpretation is a question upon which we express no opinion, deeming it more prudent to wait until the facts are fully developed.

'There is no occasion for attempting at this time to anticipate the future, and to provide for a contingency which may not arise. . . . To provide in a decree that the defendant is not enjoined from making, using, and selling devices which do not infringe, or which have been licensed, seems unnecessary. The doctrine of *Eldred* and *Kessler*, if carried to the extent contended for by the defendant, will introduce radical and far-reaching limitations upon the rights of patentees. These questions may not arise in the case at bar, but if they should, the court should have the facts, and all the facts, before attempting to decide them.' [89 C. C. A. 584, 162

Fed. 894.]

We concur in these remarks.

Decree affirmed.

Mr. Justice Day and Mr. Justice Lurton took no part in the decision.

31 S.Ct. 444, 220 U.S. 428, 55 L.Ed. 527

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United States Court of Appeals,  
Federal Circuit.

GRAIN PROCESSING CORPORATION,  
Plaintiff-Appellant,  
v.  
AMERICAN MAIZE-PRODUCTS COMPANY,  
Defendant/Cross-Appellant.

Nos. 87-1308, 87-1340.

Feb. 17, 1988.

Holder of patent on waxy starch hydrolysate brought infringement claims against producer of similar hydrolysate. The United States District Court for the Northern District of Indiana, James S. Parsons, J., held that no product infringement had occurred. On appeal, the Court of Appeals, Mayer, Circuit Judge, held that: (1) district court lacked jurisdiction to consider defendant's declaratory judgment counterclaim; (2) patent was not invalidated by public use; (3) patent was not invalidated by holder's nonlisting of reference in patent application; (4) patent was not invalid as obvious; (5) product infringement claim which listed specific solution weight and clarity failed to demonstrate infringement; and (6) defendant's hydrolysate did infringe patent under claim which did not specify solution weight.

Affirmed in part, reversed in part, and remanded.

West Headnotes

**[1] Declaratory Judgment ¶233**  
118Ak233 Most Cited Cases

Producer of waxy starch hydrolysate, defendant in product claim infringement action, was not entitled to declaratory judgment that its production process was not in violation of patent, as defendant was not in reasonable apprehension of process infringement suit, after patent holder had dropped its process claim against defendant and had steadfastly maintained it would not institute another process claim against it; thus, district court lacked jurisdiction to grant declaratory judgment, as there was no case in controversy. 28 U.S.C.A. § 2201.

**[2] Patents ¶75**  
291k75 Most Cited Cases

Limited distribution of waxy starch hydrolysate to various food processors for more than one year prior to application for patent did not constitute "public use" of product within meaning of patent invalidation statute, where custom of food industry was to have such distribution for experimental purposes, test period was short, only small quantities of hydrolysate were shipped, and samples were free of charge. 35 U.S.C.A. § 112.

**[3] Patents ¶97**  
291k97 Most Cited Cases

Inventor of clear waxy starch hydrolysate did not commit "inequitable conduct" within meaning of patent application procedures, so as to invalidate patent, by failing to refer to earlier publication on similar subject during patent application, where article was so irrelevant that nonreference probably did not constitute even simple inadvertence.

**[4] Patents ¶16.30**  
291k16.30 Most Cited Cases

Waxy starch hydrolysate, used for food processing, which remained exceptionally clear while suspended in solution for long periods of time, was not obvious development of prior art, despite previous references which discussed use and development of starch hydrolysates, where those previous hydrolysates did not remain clear when suspended in solution, were not intended for use in food processing industry, and did not have required sweetness ratio. 35 U.S.C.A. § 103.

**[5] Patents ¶16.5(1)**  
291k16.5(1) Most Cited Cases  
(Formerly 291k16.5)

Patent challenger's demonstration of waxy starch hydrolysate's obviousness, by showing that each element of patent had been previously demonstrated in prior art, was insufficient to invalidate patent, where references in combination were insufficient to suggest the invention of the patented starch hydrolysate to one of ordinary skill in the art. 35 U.S.C.A. § 103.

**[6] Patents ¶226.6**

Copr. © West 2003 No Claim to Orig. U.S. Govt. Works

840 F.2d 902  
5 U.S.P.Q.2d 1788  
(Cite as: 840 F.2d 902)

Page 2

#### 291k226.6 Most Cited Cases

Resolution of a patent infringement issue is a two step process: meaning of claims must be learned from study of all relevant patent documents, and then claims must be applied to accused structures.

#### [7] Patents ⇨160

291k160 Most Cited Cases  
(Formerly 291k167)

#### [7] Patents ⇨167(1.1)

291k167(1.1) Most Cited Cases  
(Formerly 291k167(11/4), 291k167(1),  
291k167(1/4))

When considering claims, they must be construed in light of the specification and prosecution history.

#### [8] Patents ⇨250

291k250 Most Cited Cases

Failure of patent holders, claiming infringement by development of similar waxy starch hydrolysate, to demonstrate that alleged infringing product had exceptional clarity once suspended in solution at specified minimum solution weight, both initially and over long period of time, precluded finding of patent infringement, where the hydrolysate's exceptional clarity was an essential reason that patent was initially granted, and the infringement claim itself specified the solution weight at which infringement occurred.

#### [9] Patents ⇨250

291k250 Most Cited Cases

Documents of defendant in patent infringement action, which demonstrated that its waxy starch hydrolysate had sweetness factors within range as specified by patented hydrolysate, and that defendant's hydrolysate exhibited exceptional clarity upon suspension in solution for long periods of time, demonstrated that defendant's hydrolysate infringed the patent, even though defendant's clarity tests were done at lower solution weight levels, where infringement claim did not specify solution weight at which infringement would occur, unlike an earlier claim.

#### [10] Patents ⇨226.6

291k226.6 Most Cited Cases

When determining whether patent infringement has occurred, it is improper to read the limitations of one infringement claim into another.

#### Patents ⇨328(2)

291k328(2) Most Cited Cases

2,609,326, 2,876,160. Cited as reference.

#### Patents ⇨328(2)

291k328(2) Most Cited Cases

3,849,194. Valid and infringed.

\*904 John J. Cavanaugh, of Neuman, Williams, Anderson & Olson, Chicago, Ill., argued for plaintiff-appellant. With him on the brief was Gregory B. Beggs, of Neuman, Williams, Anderson & Olson.

William D. Lucas, of Lucas & Just, New York City, argued for defendant/cross- appellant.

Before FRIEDMAN and MAYER, Circuit Judges,  
and SKELTON, Senior Circuit Judge.

#### OPINION

MAYER, Circuit Judge.

These are cross-appeals from a decision of the United States District Court for the Northern District of Indiana that claims 11-14 of United States Letters Patent No. 3,849,194 ('194 patent) were valid and infringed by the ARD 2370 product made by American Maize-Products Co. The court held, however, that Maize's Fro-Dex 5 and Fro-Dex 10 products did not infringe. We reverse the determination that Fro-Dex 10 did not infringe claims 12-14, and remand for consideration of whether increased damages and attorney fees should be awarded. All other aspects of the district court's decision are affirmed.

#### Background

This case is about starch conversion products known as starch hydrolysates. The patented hydrolysates, which are low in sweetness and taste bland, can be used as carriers for synthetic sweeteners and as bulking agents in synthetic

creams and coffee whiteners.

Frederick C. Armbruster and Earl R. Kooi developed the patented products in response to the interest of the food industry in obtaining a starch hydrolysate that would be "soluble in cold water, non-hygroscopic, give clear solutions, [and] be bland in flavor and colorless." They filed their original patent application on December 19, 1966. Obtaining the patent was difficult, however, and the prosecution history is littered with rejections by the Patent and Trademark Office (PTO) and an unsuccessful appeal to the Board of Patent Appeals and Interferences. Finally, on November 19, 1974, the '194 patent was issued.

The patent consists of ten process claims and four product claims. Grain Processing Corp. (GPC), the assignee of the patent, originally charged American Maize-Products Co. (Maize) with infringement of all 14 claims. Before trial, however, GPC withdrew charges of infringement of the process claims but continued to assert infringement of the product claims, claims 11-14. They read as follows:

11. A waxy starch hydrolysate having a dextrose equivalent value between 5 and 25 and a saccharide composition wherein the amount of DP(1) is in the range of from about 0.1 percent by weight, to about 2.4 percent by weight, dry basis, and the amount of DP(2) is in the range of from about 1.3 percent to about 9.7 percent by weight, dry basis, said hydrolysate being further characterized as producing a fluid solution free of opacity (exceptional clarity and complete lack of opaqueness) when the hydrolysate is added to water at solids concentrations specified below:

DEXTROSE EQUIVALENT OF WAXY STARCH HYDROLYSATE	SOLIDS CONCENTRATION PERCENT BY WEIGHT
--	--

10	65-70
20	75
25	80

12. A waxy starch hydrolysate having

a dextrose equivalent value between about 5 and about 25,

a descriptive ratio greater than about 2, said descriptive ratio being the quotient obtained by dividing the sum of the percentage of saccharides, dry basis, having a degree of polymerization of 1 to 6, by the dextrose equivalent value,

a monosaccharide content in the range of from about 0.1 percent by weight to about 2.4 percent by weight, dry basis,

a disaccharide content in the range of from about 1.3 percent to about 9.7 percent, by weight, dry basis, and

being further characterized as capable of producing an aqueous solution of exceptional clarity and substantially complete \*905 lack of opaqueness when said hydrolysate is added to water.

13. A waxy starch hydrolysate in accordance with claim 12, having a moisture content of less than 15 percent, by weight.

14. A waxy starch hydrolysate in accordance with claim 12, having a moisture [sic] content of about 4 percent, by weight and being further characterized as being a waxy starch hydrolysate syrup solid product which is substantially 100 percent soluble and capable of forming an aqueous solution completely free of haze.

Maize denied infringement and counterclaimed that the '194 patent was invalid under 35 U.S.C. § 112, was anticipated by the prior art under 35 U.S.C. § 102, and was obvious over the prior art under 35 U.S.C. § 103. It also claimed the patent was unenforceable because of inequitable conduct by GPC's predecessor, Corn Products Co.

The issues of liability and damages were bifurcated and a 32-day trial on liability followed. The district court held that Maize had not shown there was a case or controversy over the ten process claims because there was no reasonable apprehension that it would be sued for infringement of those claims. It concluded further that Maize had not proven the four product claims were invalid. In the court's view, the '194 patent did not violate section 112 because the terms of the product claims were sufficiently definite and precise. The

court also held that the invention was not anticipated by the prior art because Wallerstein, the alleged anticipating source, did not have the claimed invention's capacity to produce starch hydrolysates that remained haze-free over time.

As to Maize's attempt to invalidate the patent as obvious in light of the prior art under section 103, the district court decided that the references, either alone or in combination, did not teach or suggest the patented invention. Furthermore, there had been no showing that the predecessor Corn Products Co. had violated the prohibition in section 102(b) against public use of a product more than one year prior to the patent application.

On infringement, the district court concluded that one accused product, ARD (Fro-Dex) 2370, infringed each of the four product claims of the '194 patent. It found, however, that the two remaining accused products, Fro-Dex 5 and Fro-Dex 10, did not infringe any of the product claims.

The primary basis for the court's finding of no infringement was that, when read in light of the specification and the prosecution history, the '194 patent required "exceptional long-term clarity." The accused products led to initially clear solutions, but the court said there was no showing that they remained clear for an appreciable length of time. Because long-term clarity was "of the essence in" the patent, the court concluded neither Fro-Dex 5 nor Fro-Dex 10 infringed.

#### Discussion

The only issue raised by GPC on appeal is whether the district court erred in holding that the Fro-Dex 10 product did not infringe claims 11-14. Maize, on the other hand, raises a wide variety of questions, most of which address the validity of the '194 patent. We turn first to validity.

#### Validity

*A. Process Claims.* As a preliminary matter, we address Maize's contention that the district court erred in holding that there was no case or controversy over the ten process claims. Maize says it was entitled to a declaratory judgment of

invalidity on those claims because the original complaint filed by GPC alleged they were infringed.

[1] There is no question that a case or controversy is a jurisdictional predicate for declaratory judgment under 28 U.S.C. § 2201. *Jervis B. Webb Co. v. Southern Sys., Inc.*, 742 F.2d 1388, 1398, 222 USPQ 943, 949 (Fed.Cir.1984); *see also Windsurfing Int'l, Inc. v. AMF, Inc.*, 828 F.2d 755, 757, 4 USPQ2d 1052, 1054-55 (Fed.Cir.1987). And "an actual controversy must be extant at all stages of review, not merely \*906 at the time the complaint is filed." *Preiser v. Newkirk*, 422 U.S. 395, 401, 95 S.Ct. 2330, 2334, 45 L.Ed.2d 272 (1975). The actual controversy requirement precludes a declaration about the validity of claims unless the defendant objectively has a "reasonable apprehension that it will face an infringement suit" on those claims. *Webb*, 742 F.2d at 1388, 222 USPQ at 949; *International Medical Prosthetics Research Assoc. v. Gore Enterprise Holdings, Inc.*, 787 F.2d 572, 575, 229 USPQ 278, 281 (Fed.Cir.1986).

Here, Maize has no "reasonable apprehension" it will face an infringement suit on the process claims. GPC abandoned its charge that Maize had infringed them prior to trial, and since then has "steadfastly refused to assert infringement" of those claims. There is also nothing in the record to suggest that Maize will be faced with a similar infringement suit in the future. Therefore, no case or controversy surrounds them, and the district court correctly refused to consider a declaratory judgment of invalidity. *Cf. Medical Prosthetics*, 787 F.2d at 575, 229 USPQ at 280 (existence of case or controversy must be determined from the "totality of the circumstances").

B. *Product Claims*. Recognizing the statutory presumption that a patent is valid, 35 U.S.C. § 282, the district court upheld the validity of the four product claims. Maize attacks this holding, but it has shown no error.

1. *Public Use*. Section 102(b) precludes "attempts by the inventor or his assignee from commercially exploiting [an] invention more than a year before the application for patent is filed." *Western Marine Elec., Inc. v. Furuno Elec. Co.*, 764 F.2d 840, 845, 226 USPQ 334, 337 (Fed.Cir.1985). Maize says that statute was violated here because GPC's

predecessor, Corn Products Co., put its product into public use more than one year prior to the application for the '194 patent. We disagree.

[2] " 'Public use' of a claimed invention under section 102(b) has been defined as any use of that invention by a person other than the inventor who is under no limitation, restriction or obligation of secrecy to the inventor." *In re Smith*, 714 F.2d 1127, 1134, 218 USPQ 976, 983 (Fed.Cir.1983). Public use does not, however, encompass use that "was primarily for bona fide experimental purposes." *Id.* According to the Supreme Court:

The use of an invention by the inventor himself, or of any other person under his direction, by way of experiment, and in order to bring the invention to perfection, has never been regarded as ... a [public] use.

*City of Elizabeth v. American Nicholson Pavement Co.*, 97 U.S. (7 Otto) 126, 134, 24 L.Ed. 1000 (1878); *see TP Laboratories, Inc. v. Professional Positioners, Inc.*, 724 F.2d 965, 972, 220 USPQ 577, 583 (Fed.Cir.1984) (no finding of invalidity where dental appliances used experimentally on patients more than one year prior to patent application).

The district court found that the use of the patented product more than one year prior to the patent application was experimental. Corn Products Co. had shipped some samples of it to a few food manufacturers. As the court also found, however, it was industry custom "to submit samples of proposed products to food manufacturers for determination of the product's utility." The evidence showed that this testing was necessary because ingredients like starch hydrolysates may interact adversely with other food ingredients in the manufacturers' products. Furthermore, the testing period was short, very small quantities of the samples were shipped, and they were free of charge. Because there was nothing in Corn Products' conduct that was "inconsistent with experimentation," *see TP Laboratories*, 724 F.2d at 972, 220 USPQ at 583, the district court correctly determined that there had been no public use. *See Western Marine Elec.*, 764 F.2d at 845, 226 USPQ at 337-38 (totality of the circumstances relating to the character and extent of commercial activities must be considered under section 102).

[3] 2. *Inequitable Conduct*. Maize also says the '194 patent is unenforceable because Corn Products Co. was guilty of \*907 inequitable conduct in failing to disclose Underkofler, Denault & Hou, *Enzymes in the Starch Industry*, 17 Die Starke 179 (1965), to the PTO when it applied for the patent. This is without merit. " 'Inequitable conduct' requires proof by clear and convincing evidence of a threshold degree of materiality of the nondisclosed or false information." *J.P. Stevens & Co. v. Lex-Tex, Ltd.*, 747 F.2d 1553, 1559, 223 USPQ 1089, 1092 (Fed.Cir.1984). The Underkofler publication does not meet this test. It spoke to high dextrose equivalent (D.E.) syrups with a high maltose content, and which do not claim to produce clear solutions in water. The '194 patent, on the other hand, claims low D.E. products having a low maltose content, and which produce clear solutions in water. Underkofler bears little, if any, relevance to the patented product.

Moreover, there is no evidence the patentees acted with the requisite state of mind when they did not disclose Underkofler. The patentees were aware of the publication, having cited it in an article they had written. But there was no evidence they failed to disclose it either intentionally or through gross negligence. See, e.g., *J.P. Stevens & Co.*, 747 F.2d at 1560, 223 USPQ at 1092 (intent or gross negligence required for inequitable conduct); *In re Jerabek*, 789 F.2d 886, 891, 229 USPQ 530, 533 (Fed.Cir.1986) (at least gross negligence needed for inequitable conduct). Indeed, because of Underkofler's lack of relevance, it is doubtful they were guilty of even simple inadvertence in the non-disclosure. Cf. *Hycor Corp. v. Schlueter Co.*, 740 F.2d 1529, 1540, 222 USPQ 553, 561 (Fed.Cir.1984) (simple negligence insufficient for inequitable conduct). Accordingly, the patent was not unenforceable because of inequitable conduct.

[4] 3. *Obviousness*. The district court likewise correctly concluded that the product claims were not invalid as obvious over the prior art under section 103. When resolving an obviousness issue, "the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed.Cir.1984). Care must be taken to avoid hindsight reconstruction by using

"the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit." *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012, 217 USPQ 193, 199 (Fed.Cir.1983).

Both parties agree that the *Wallerstein Company Technical Bulletin Number 236* (April 1964) and *Wallerstein Company Data Sheet No. 242* (January 1965) are the "best" prior art references. Wallerstein, however, diverges from the patented invention in an important way: solutions resulting from the patented product remain clear for long periods of time, while haze ultimately forms in the Wallerstein solutions.

The other references cited by Maize to establish obviousness have little relevance. For example, Pigman et al., Patent No. 2,609,326, relates to laundry starch. Obviously, there is no requirement that laundry starch be bland in taste or have low sweetness. Likewise, Schock et al., Patent No. 2,876,160, has to do with the incorporation of materials such as insecticides or paints into a starch matrix. It does not disclose the type of waxy starch hydrolysate disclosed in the '194 patent. Furthermore, it says nothing about products that have the monosaccharide or disaccharide content, or the descriptive ratio of the patented products.

[5] Maize's effort to establish obviousness by showing that each element of the patented products may be found somewhere in the prior art is also unavailing. In determining obviousness, "the inquiry is not whether each element existed in the prior art, but whether the prior art made obvious the invention as a whole for which patentability is claimed." *Hartness Int'l, Inc. v. Simplimatic Eng'g Co.*, 819 F.2d 1100, 1108, 2 USPQ2d 1826, 1832 (Fed.Cir.1987). Here, the cited references would not have been sufficient, either alone or in combination, to suggest the invention to \*908 one of ordinary skill in the art. See *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed.Cir.1984). Accordingly, the district court correctly refused to invalidate the claims under section 103.

C. *Conclusion on Validity*. Maize's remaining arguments are also without merit. Therefore, we affirm the validity of the four product claims, and

[I]t should be recognized that the starch hydrolysates of the present invention are characterized as being capable of remaining haze-free in concentrated solutions for *long periods of time*.... The Wallerstein references do not refer to the products as being haze-free upon standing for long periods of time. It is one of the objectives of the affidavits of record to demonstrate that the Wallerstein starch hydrolysates became hazy upon standing, whereas the starch hydrolysates of the present invention remain haze-free for *long* periods of time. It is this precise characteristic that contributes to the commercial success of the ... claimed products where the hydrolysates of the prior art had failed.

In view of this prosecution history, it is evident that when the patentees stated that their product had "exceptional clarity and complete lack of opaqueness" they meant that--unlike solutions from the Wallerstein reference which were initially clear but soon developed haze--the claimed products resulted in both initial and long-term clarity. According to the district court:

Notable for purposes of determining this case is the patentee's assertion that the central distinguishing feature between the product of their invention and the products of the prior art is the capacity of their invention to remain haze free over long periods of time. [Maize] has itself observed that this feature, the characteristic of remaining haze free and retaining exceptional clarity over time, is an essential element of the '194 patent. And it was the representation of this quality that evidently convinced the patent examiner that the invention of the application was a substantial and patentable improvement over the prior art and should be allowed. I conclude that this feature of clarity, long-term clarity, is of the essence in the invention. It must be demonstrated that an accused product possesses this feature before it can be considered to meet "exceptional clarity" elements in the patent's product claims.

So the term "exceptional clarity" requires that a product exhibit long-term clarity, and notwithstanding GPC produced one document showing that Fro-Dex 10 was initially clear at a 65% solids concentration, it offered nothing to show that Fro-Dex 10 was clear for any length of

timeat that level.

But GPC strenuously contests the finding of non-infringement, saying the district court "was in error in holding that the clarity or lack of opaqueness feature must be determined by one specific procedure." It argues that the court improperly limited the patent to an example in the specification by assuming that long-term clarity could only be determined spectrophotometrically using a particular wave length and a particular size of cell to determine light transmittancy. *See, e.g., Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 699, 218 USPQ 865, 871 (Fed.Cir.1983) (claim, not the specification, measures the invention). Long-term clarity can be measured using visual tests as well as spectrophotometric procedures.

The argument does not help. The court did not limit the test for long-term clarity to a spectrophotometric procedure. In reaching its finding of non- infringement, the court looked at all the evidence of long-term clarity, including that based on visual observation. According to the court:

**\*910** One skilled in the art should find it sufficiently clear and definite that "exceptional clarity" means a light transmittance percent reasonably near the ranges shown on Table 2, when measured at 600 mu with a 4 centimeter cell.

This is not to suggest, however, that proof of exceptional clarity must be in the nature of empirical measurement only. *Rather, it could also be proved, for example, by competent testimony of the visual observations of witnesses who are experienced in the field of starch hydrolysis....*

Later the court said, "Claims in a patent should not be limited strictly to preferred embodiments or specific examples in the specifications." Likewise, on reconsideration the court expressly acknowledged that the test for "exceptional clarity" should not be limited to one specific procedure.

[I]t is impermissible to limit the claims of a patent to examples shown in the specifications....

... [E]xceptional clarity need not be shown with mathematical precision--for it also can be proved by testimony about the visual observations of witnesses who are experienced in the field of



solids concentrations below 65%. But unlike claim 11, claim 12 does not specify a solids concentration at which long-term clarity must be exhibited. It is improper to read the limitations of one claim into another, *see, e.g., D.M.I., Inc. v. Deere & Co.*, 755 F.2d 1570, 1574, 225 USPQ 236, 239 (Fed.Cir.1985), *later appeal*, 802 F.2d 421, 231 USPQ 276 (Fed.Cir.1986), so it is inappropriate to read claim 12 to require that a product exhibit long-term clarity at a minimum solids concentration of 65%. Because the solids concentration limitation of claim 11 is inapplicable to claim 12, the tests establishing the long-term clarity of Fro-Dex 10 at concentrations below 65% are sufficient to establish infringement of that claim.

D. *Claims 13 and 14.* Claims 13 and 14 depend from claim 12, and Maize conceded during trial that Fro-Dex 10 met the additional elements required by those claims. It admitted that Fro-Dex 10 (1) has a moisture content of less than 15 percent; (2) has a moisture content of about 4 percent; and (3) is 100 percent soluble to form an aqueous solution. Therefore, the only dispute over infringement of claims 13 and 14 was whether the accused product met the requirements of claim 12. Because Fro-Dex 10 infringes claim 12, it infringes claims 13 and 14.

E. *ARD 2370.* ARD 2370 meets all the limitations of claims 11-14. There is no dispute that it is a waxy starch hydrolysate with DP(1) and DP(2) values in the range identified in the '194 patent. Furthermore, the evidence showed that a sample of ARD 2370 exhibited long-term clarity at a solids concentration of 75%, and that some samples had the required descriptive ratio. Accordingly, the district court correctly found that ARD 2370 infringed the product claims.

F. *Exceptional Case.* GPC contends that Maize deliberately set out to copy the patented product and should therefore be liable for increased damages and attorney fees. *See* 35 U.S.C. §§ 284, 285. Because there are insufficient factual findings for us to resolve either claim, we remand to the district court to make the necessary findings. *See Bayer Aktiengesellschaft v. Duphar Int'l Research B.V.*, 738 F.2d 1237, 1244, 222 USPQ 649, 654 (Fed.Cir.1984) (remanding case for "further consideration and elaboration of the award of attorney fees").

#### Conclusion

The parties' remaining arguments have no merit. Accordingly, the holding that Fro-Dex 10 did not infringe claims 12-14 is **\*912** reversed, and the case is remanded to the district court to determine whether GPC is entitled to increased damages and attorney fees. The decision is affirmed in all other respects.

AFFIRMED IN PART, REVERSED IN PART,  
AND REMANDED.

840 F.2d 902, 5 U.S.P.Q.2d 1788

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